

BRINGING LOST WORLDS to LIFE at CAPRICORN CAVES, ROCKHAMPTON

Ann Augusteyn

“Capricorn Caves has the longest palaeontological record of faunal change for a single tropical cave system in Australia, with over 500,000 years of prehistory from ancient rainforest fauna through arid adapted fauna to modern times. The development of these new fossil tours will allow visitors to discover the direct evidence of our past, understand how our modern environment came to be and then contemplate a future for us all”

Dr Scott Hocknull, Senior Curator Geosciences, Queensland Museum

Our challenge at Capricorn Caves is twofold: the preservation of these significant fossil deposits discovered by Dr Scott Hocknull (Queensland Museum) and Rochelle Lawrence (Capricorn Cave palaeontologist) and how to tell this story to our guests. That message is about a key period of global environmental and climatic change, faunal and floral extinctions and the evolution of the modern Australian environment.

On the day, all fossil tours were fully booked within 30 minutes of being posted on Facebook! Families enjoyed clay modelling, colouring in, bone sorting and primitive instinct skills including fire lighting with sticks. The media attended in full force and Facebook was flooded with an abundance of posts. The local Caves Bush Fire Brigade volunteered essential help with parking and raised \$2000 with their sausage sizzle. The event was deemed a huge success and the fossil tours have been fully booked throughout the winter holiday period.

But this doesn't just happen: months of planning, guide training and innovative marketing preceded the launch.



*Scott and Rochelle identify fossils on Open Day
Photo: Ann Augusteyn*

On Saturday June 3rd we launched our signature palaeotourism experience: *“Bringing Lost Worlds to Life”*. Three thousand people flocked to Capricorn Caves to assist our team to sift through fossil rich sediment sampled by Queensland Museum from the Mt Etna mine fossil salvage, now part of the Mt. Etna Caves National Park. Dr Scott Hocknull and Rochelle Lawrence and our team of trained palaeo guides were on hand to identify these discoveries. One tooth discovered by a ten year old girl was new to science, a fossil species belonging to a mammal 300,000 years old. Several hundred unique specimens were discovered and all formed part of the Queensland Museum research collection. These fossils represent similar material only recently discovered at Capricorn Caves, providing a direct link between the fossil heritage at Mt. Etna with the fossils found in our cave system. A great collaboration that had been discussed and planned for many years between science and education has been realised. We are excited about what discoveries will be made and what the future will hold for our ongoing work with the Queensland Museum.



*Elise Augusteyn examines a bone
Photo: Ann Augusteyn*

“Learning the information for the new fossil tour absolutely blew my mind. It is amazing to be able to look at the evidence of what has happened in the past , to discover why everything looks like it does today. I have a passion for learning and interpreting this information to the public. Working as a Palaeo guide never gets repetitive. Every day I am learning more and more, it is so exciting to be part of something so unique.”

Christian Bom Palaeo Guide Capricorn Caves June 2017



L to R. Scott Hocknull, Rochelle Lawrence, Amanda Hinton, Jordan Wheeler, Kath Herring, Jay Bond
Sitting Chennoa Wells, Alex Lydell
Photo: Ann Augusteyn



Christian Bom introducing marine fossils
Photo: Ann Augusteyn

Fossil assets

First and foremost we were able to contract the services of palaeontologist Rochelle Lawrence, thanks to a Commonwealth Industry Skills Fund grant. Rochelle co-discovered the new fossil deposits at Capricorn Caves and has developed a scientifically accurate fossil asset package that included fossil fact sheets, guide manuals, training assets, videos, palaeoart and helped coordinate 2D laser print outs of life sized megafauna.

visualisation of huge amounts of data from sites, specimens and objects. Capturing this data digitally allows these experiences to be transportable, accessible and interactive while being delivered to a wider audience. We are looking into innovative ways to bring this 3-D data to the general public as part of our public programs, especially considering those visitors with mobility or sensory difficulties. Using these processes Rochelle and Scott have produced 3-D printed models of the skull of *Thylacoleo hilli* (Pygmy Marsupial Lion) and our very own *Conilurus capricornensis* the Capricorn rabbit rat.

Digital technology

Delegates at the ACKMA AGM 2016 at Capricorn Caves will recall Scott’s presentation on digital technologies and the preliminary 3D scans of Capricorn Caves. In collaboration with Jon Baginski (Geovirtua), Scott and Rochelle have captured most of our cave system in high resolution 3-D. Application of technology generates more accurate research and allows

Guest experience

Guides and palaeontologists collaborated to develop a fossil tour route through the caves with appropriate maximum numbers, minimal impact on other cave tours and the environment. Alternate routes were developed to accommodate seasonal bat roosts. Three tours are available daily at set times.



Paleo Guide Jay Bond assists young fossicker
Photo: Ann Augusteyn



Scott Hocknull shows Capricorn Cave guides a fossil bone
Photo: Ann Augusteyn



*John and Joan Mylroi, Greg Middleton and David Foran check out the fossil collection
Photo: Ann Augusteyn*

Being able to see the fossils, in context of where they come from is a key hook for staff and visitor. One of the greatest challenges for our tour is that many of the fossils we have are very small. Rochelle developed a resource kit that allows people to get up close and personal to these original fossils whilst keeping them safe and secure. 3-D technology has also been used to assist in this area.

Guide training

Guide training to deliver the best possible experience was critical. Rochelle and Scott hosted a four day training workshop for the guides. This included product knowledge but also delivery of the fossil interpretation. Rochelle has developed training videos as a permanent resource for our guides. We also organised on site workshops for all staff based on Tourism Events Queensland (TEQ) story telling experience project. As an extension we organised some professional development for eight guides to attend the Savannah Guide School and Australian Age of Dinosaur Museums at Winton.

Outcomes

Capricorn Cave paleo guides

The new fossil tour has transformed the guides enthusiasm and they have embraced their role as custodians of this unique cave environment and its heritage. Since the tours have commenced several guides have discovered new deposits, recorded them and alerted Rochelle and Scott to their existence. This will further the scientific understanding of the fossil sites and every site fills a gap in our knowledge.

Digital marketing

We successfully applied for a Commonwealth Industry Skills Fund grant which enabled us to engage a digital marketing strategist for a 3 day workshop with our staff. Together they developed dynamic strategies to engage the consumer and

expand our digital presence. To support this we reinvented our guests' purchase journey with on line booking options. Thanks also go to Waitomo and Jenolan for sharing their experiences with online booking.

Education

The new fossil tour is already a winner with school groups, even before it has been formally inserted into the school program. Grade three teacher, Sandra Brady commented that "I couldn't believe that you could improve the school program but the new fossil tour is absolutely perfect; it engaged the children in meaningful discovery activities with real fossils and real bones. Well done Capricorn Caves."

Community Science

National Science week was celebrated in Mackay (300 kms north of Capricorn Caves, Rockhampton) with a Megafauna Community Day hosted by Queensland Museum and BHP. We were invited to participate and showcase our fossil deposits to the 3000 attendees. Jordan Wheeler commented that it was a wonderful opportunity to "educate Central Queensland locals about the amazing and unique fauna that has existed in our own backyards and particularly how they can continue to learn about this at Capricorn Caves."

Rochelle Lawrence reported that "Some of the top comments were the enjoyment of the interactive activities especially with young kids and those with physical and learning disabilities. It was a real experience with real fossils and they were meeting real scientists and guides."

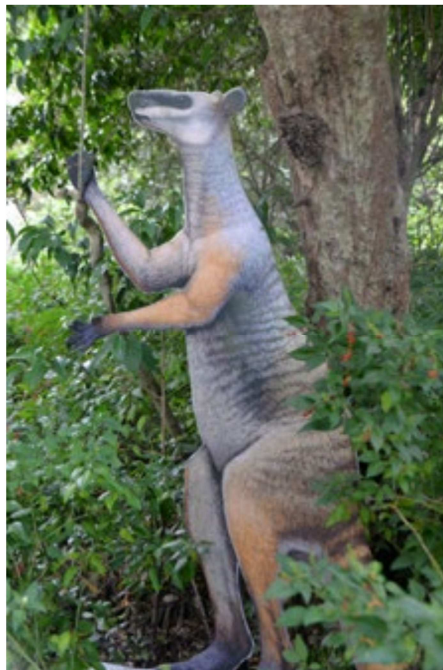
The National Science Week Community Day was a demonstration of how government, tourism and science can come together to celebrate and communicate science to regions usually absent from this opportunity. It demonstrated that our contribution to understanding our fossil heritage from our caves has broader implications within the region, creating linkages between towns and communities that might not have traditionally been formed.

Partnerships

We have made a commitment to provide opportunities to continue to assist Queensland Museum to sift and sort the fossil rich sediments from Mt Etna, salvaged by QM during the mining era, and now part of a scientific reserve within Mt. Etna NP. We also committed to understanding our own prehistoric story through analysis of the deposits within Capricorn Caves. This provides an opportunity for great citizen science linkages, where the public is directly engaged with and contributing to the scientific research - perhaps even discovering

a new species. This will provide a wonderful resource for future citizen science days, events and ongoing educational programs, including the development of stage 2 - a working preparation facility.

For 130 years people have walked through Capricorn Caves. But it is only in the last decade thanks to palaeontologists Scott Hocknull and Rochelle Lawrence and local caver Noel Sands that the secrets of the caves are being discovered and their story is transforming Capricorn Caves into a true living museum that is engaging people from all walks of life.



*Life size laser print out of Protetnodon
Photo: Ann Augusteyn*